

the present invention, as embodied and broadly described, the base station stores RSIMs generated by information block segments from a radio network controller in a memory. Then, the base station calculates transmission time points SFN_{tx} of the RSIM generated by information block segments to the air in advance. Then, the base station queues the stored RSIMs in an order of earliest transmission based on the calculated transmission time points with reference to the current time point. The base station compares a system frame number SFN_{cur}, the current time point, with the transmission time point SFN_{tx} of the RSIM to be transmitted the earliest in the queued RSIMs at every time interval(20ms). The base station transmits the RSIM to be transmitted to the air at the earliest to the air as a result of the comparison.

[018] In other aspect of the present invention, the base station receives a system information update message from a radio network controller, and stores all RSIMs generated by information block segments and scheduling parameters contained in the message. Then, the base station calculates transmission time points of the RSIMs to the air, and forms a queue of RSIMs based on the transmission time points of the all RSIMs according to a set queuing algorithm. Then, the base station selects a first element from the queue of the RSIMs at fixed time intervals, and transmits the RSIM to the air when the transmission time point of the RSIM, the selected element, is the same with the current time point.

[019] Preferably, whenever one RSIM is transmitted to the air at fixed intervals, the base station calculates a next transmission time point SFN_{tx} of the transmitted RSIM, and forms a new queue of RSIMs using a set queuing algorithm.

[020] In another aspect of the present invention, there is provided an asynchronous mobile communication system including a first signal processing part for processing a system update message received from a radio network controller, a memory for storing RSIMs and

update message received from a radio network controller, a memory for storing RSIMs and scheduling parameters contained in the processed message, a control part for calculating transmission time points of the RSIMs to the air in advance, and forming a queue of the stored RSIMs in an order of the earliest transmission to the air based on the calculated transmission time point, a comparing part for comparing the current time point to the transmission time point of the RSIM to be transmitted at the earliest among the queue of the RSIMs at preset intervals under the control of a control signal, and a second signal processing part for processing the RSIM to be transmitted to the air according to a result of the comparison.

[021] Preferably, whenever one RSIM is transmitted to the air at fixed intervals, the control part in the base station calculates a next transmission time point SFN_{tx} of the transmitted RSIM, and forms a new queue of RSIMs by using a set queuing algorithm again.

[022] It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory and are intended to provide further explanation of the invention as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

[023] The accompanying drawings, which are included to provide a further understanding of the invention and are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and together with the description serve to explain the principles of the invention:

In the drawings:

FIG. 1A and FIG. 1B illustrate a diagram showing a relation between the system information block, the IB segment, and RSIM;

FIG. 2 illustrates a block diagram showing a system of a base station in an asynchronous mobile communication system in accordance with a preferred embodiment of

FIG. 3 illustrates a diagram showing an example of a queue of RSIMs produced according to a queuing algorithm of the present invention; and,

FIG. 4 illustrates a diagram showing a queue of RSIMs produced newly as the next transmission time SFN_{tx} is calculated after a RSIM generated by the first segment of the master information block is transmitted to the air in FIG. 3.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[024] Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings. FIG. 2 illustrates a block diagram showing a system of a base station in an asynchronous mobile communication system in accordance with a preferred embodiment of the present invention.

[025] Referring to FIG. 2, the base station includes a first signal processing part 10, a memory 20, a micro control part 30, a comparing part 40, and a second signal processing part 50. The first signal processing part 10 processes a signal for receiving and storing of a system information update message from a RNC (not shown). The memory 20, a general memory device, stores RSIMs generated by information block segments contained in the system information update message processed at the first signal processing part 10, and scheduling parameters in response to a control signal. The micro control part 30 calculates time points SFN_{tx} at which the RSIM are respectively transmitted to the air in advance, and queues the stored RSIMs in an order to be transmitted to the air based on the calculated transmission time points SFN_{tx}. That is, the micro control part 30 produces the queue of RSIMs. Moreover, the micro control part 30 provides control signals applied to other parts. The comparing part 40 compares a system frame number SFN_{cur} of current time point to a transmission time point SFN_{tx} of a first element in the queue of the RSIMs, i.e., the RSIM to be transmitted at the earliest at fixed time intervals (20ms in this embodiment) in response to